

R E M A R K S

I. Introduction

In response to the Office Action January 22, 2007, Applicants have amended claims 1 and 2 to overcome the § 112 rejections. Support for the amendments to claims 1 and 2 may be found, for example, on page 8, lines 1-22. Claims 3 and 4 have been cancelled, without prejudice. New claims 5 and 6 have been added. Support for new claims 5 and 6 may be found, for example, in Figs. 1-3 of the drawings. In addition, the specification has been amended to correct informalities and inadvertent errors. No new matter has been added.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1 and 2 Under 35 U.S.C. § 112

Claims 1 and 2 are rejected under 35 U.S.C. § 112, second paragraph, as being unclear. The rejection alleges that the definition of the term “interval-accuracy” is unclear. As such, the rejection suggests that with regard to claims 1 and 2, the limitation referring to the interval-accuracy is “trying to point out that since the lower surface of the yoke is a reference plane of the frame during injection molding, that the diaphragm connected to the lower portion of the frame is precisely connected since it is connected to the part of the frame closest to the reference plane, in comparison to the other diaphragm connected to the upper portion of the frame since the height of the upper portion of the frame depends on the thickness of the components: yoke, magnet, top plate.” Applicants agree that this meaning is accurate. Applicants also offer an additional meaning of the term “interval accuracy” to mean that a positional accuracy of a

diaphragm as opposed to a yoke when one side of the yoke opposed to the diaphragm is a reference plane.

With regard to the first embodiment of the present invention, it is alleged that on page 4, line 4 of the specification and the related portions of claims 1 and 2, the phrase “an *inner* peripheral surface of the second plate” should be changed to “an *outer* peripheral surface of the second plate”. Applicants respectfully disagree with this interpretation. As is clearly shown in Figs. 1-3 of the specification, the 2nd magnetic gap is located between the inner peripheral surface of the second plate and the inner peripheral surface of the yoke. As such, Applicants respectively submit that the proposed amendment to the specification and the claims is unnecessary and improper.

III. The Rejection Of Claims 1 And 2 Under 35 U.S.C. § 103

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyamoto et al. (USP No. 6,744,895) in view of Han et al. (US 2002/0071590). Applicants respectfully traverse these rejections for at least the following reasons.

With regard to the present invention, amended claims 1 and 2 recite, in-part, a loudspeaker comprising: a hollow frame having opening sections at its upper side and lower side wherein the frame is integrated with an outer peripheral part of a connected-component which is formed by coupling the yoke with the first magnet and the first plate, wherein an upper surface of the yoke is integrated as a reference plane in mounting for a mold of the frame, thereby an interval-accuracy between the first diaphragm and the yoke can be improved as compared with an interval-accuracy between the second diaphragm and the yoke.

One feature of the present invention lies in that at least one of a mounting surface of the yoke 3A is set as a reference plane in mounting for a mold of the frame 1D as shown in Fig. 3. Interval-accuracy between one diaphragm that is placed at a near side of the yoke 3A reference plane and yoke 3A can be improved as compared with interval-accuracy between the other diaphragm, that is placed at a far side of the yoke 3A reference plane and yoke 3A. In other words, when a surface of yoke 3A opposed to first diaphragm 9 is the reference plane in insert-molding, interval-accuracy between first diaphragm 9 and yoke 3A can be improved as compared with interval-accuracy between second diaphragm 11 and yoke 3A. As a result, variations in sound-pressure frequency characteristics may be avoided by using the loudspeaker on the side of the second diaphragm 11 as the receiver. As is described in the specification on page 8, lines 7-16:

“...in a case where a lower surface of yoke 3A is a mounting surface for a mold of frame 1D, an interval between second diaphragm 11 and the yoke only depends on assembling-accuracy of the mold of frame 1D. On the other hand, an interval between first diaphragm 9 and yoke 3A depends on assembling-accuracy of the mold of frame 1D and variations in a board thickness of yoke 3A. In a loudspeaker which is employed as a receiver used by making the operator's ear close to the receiver, the operator recognizes variations in sound-pressure frequency characteristics. Therefore, such a problem can be avoided by using the loudspeaker of a side of second diaphragm 11 as a receiver.”

In contrast to the present invention, neither Miyamoto nor Han disclose a difference in the interval-accuracy between the first diaphragm and the second diaphragm. Nor does the combination of the two references result in such a difference. As is acknowledged in the

rejection, Miyamoto does not disclose a device wherein the frame is integrated with the yoke in assembling the frame and wherein the interval-accuracy is improved from one diaphragm over the other. Importantly, Han also fails to disclose this limitation. In fact, it appears that nowhere in the Han reference is there any mention of a diaphragm or a preference for the use of one side of the speaker frame over the other. Han discloses that injection molding “unitizingly secures the yoke part, the magnet and the upper plate” (see, Abstract of Han). As such, there is no suggestion or motivation for the use of one side over the other in terms of interval-accuracy, structural integrity or any other feature. Indeed, Han does not disclose or suggest the need to improve the interval-accuracy of one of the diaphragms of Miyamoto over the other diaphragm. Therefore, Applicants respectfully submit that the combination of Miyamoto and Han fails to disclose the above cited features of the present invention.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA1974). As Miyamoto and Han, at a minimum, fail to describe a loudspeaker comprising: a hollow frame having opening sections at its upper side and lower side wherein the frame is integrated with an outer peripheral part of a connected-component which is formed by coupling the yoke with the first magnet and the first plate, wherein an upper surface of the yoke is integrated as a reference plane in mounting for a mold of the frame, thereby an interval-accuracy between the first diaphragm and the yoke can be improved as compared with an interval-accuracy between the second diaphragm and the yoke, it is submitted that Miyamoto, alone or in combination with Han, does not render claims 1 and 2 obvious. Accordingly, it is respectfully requested that the § 103 rejection of claims 1 and 2 be withdrawn.

Moreover, claims 5 and 6 each contain converse but similar features to that of claims 1 and 2, wherein when a surface of yoke 3A opposed to second diaphragm 11 is the reference plane in insert-molding, interval-accuracy between the second diaphragm 11 and yoke 3A can be improved as compared with interval-accuracy between the first diaphragm 9 and yoke 3A. As such, Applicants submit that claims 5 and 6 are also allowable over the cited prior art.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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